

Product Information

Anti-ATG101 antibody, Mouse monoclonal
clone ATG101-15, purified from hybridoma cell culture

Catalog Number **SAB4200506**

Product Description

Anti-ATG101 (mouse IgG1 isotype) is derived from the hybridoma ATG101-15 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to an internal sequence of human ATG101 (GeneID: 60673), conjugated to KLH. The corresponding sequence is identical in mouse, rat, monkey, canine and bovine ATG101. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2. The antibody is purified from culture supernatant of hybridoma cells grown in a bioreactor.

Anti-ATG101 recognizes human ATG101. The antibody may be used in various immunochemical techniques including immunoblotting (~30 kDa) and immunoprecipitation. Detection of the ATG101 band by immunoblotting is specifically inhibited by the immunizing peptide

Macroautophagy, usually referred to as autophagy, is a major pathway for bulk degradation of cytoplasmic constituents and organelles. In this process, portions of the cytoplasm are sequestered into double membrane vesicles, the autophagosomes, and subsequently delivered to the lysosome for degradation and recycling.^{1,2} Although autophagy is a constitutive cellular event, it is enhanced under certain conditions such as starvation, hormonal stimulation and drug treatments.³ Autophagy is required for normal turnover of cellular components during starvation. It plays an essential role in cellular differentiation, cell death and aging. Defective autophagy may contribute to certain human diseases such as cancer, neurodegenerative diseases, muscular disorders and pathogen infections.^{4,5} Autophagy is an evolutionary conserved pathway seen in all eukaryotic cells.¹ At least 16 ATG genes required for autophagosome formation were identified in yeast by genetic screens. For many of these genes, related homologs have been identified in mammals.⁶ Atg101 is a mammalian Atg13 binding protein essential for autophagy. Atg101 is conserved in various eukaryotes, but not in yeast. Atg13 forms a stable complex with ULK1 and FIP200. Atg101 associates

with the ULK1-Atg13-FIP200 complex through direct interaction with Atg13. mTOR interacts with the ULK1-Atg13-FIP200 complex in a nutrient dependent manner, suggesting that mTOR regulates autophagy through this complex.⁷⁻¹¹

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze at -20 °C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.5-1.0 µg/mL is recommended using whole extracts of HEK-293T cells overexpressing human ATG101.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

1. Klionsky, D.J., and Emr, S.D., *Science*, **290**, 1717-1721 (2000).
2. Kuma, A., et al., *Nature*, **432**, 1032-1036 (2004).
3. Kabeya, Y., et al., *EMBO J.*, **19**, 5720-5728 (2000).

4. Reggiori, F., and Klionsky, D.J., *Eukaryotic Cell*, **1**, 11-21 (2002).
5. Shintani, T., and Klionsky, D.J., *Science*, **306**, 990-995 (2004).
6. Klionsky, D.J., et al., *Develop. Cell*, **5**, 539-545 (2003).
7. Hosokawa, N., et al., *Mol. Biol. Cell*, **20**, 1981-1991 (2009).
8. Jung, C.H., et al., *Mol. Biol. Cell*, **20**, 1992-2003 (2009).
9. Mercer, C.A., et al., *Autophagy*, **5**, 649-662 (2009).
10. Hosokawa, N., et al., *Autophagy*, **5**, 1-7 (2009).
11. Mizushima, N., *Curr. Opin. Cell Biol.*, **22**, 132-139 (2010).

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